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### REMARKS

In response to the Office Action mailed December 13, 2002, please consider the following remarks.

Applicants will file a Supplemental Amendment, including Information Disclosure Statement and correction of Formal Drawings shortly. Applicants will also file a Terminal Disclaimer to overcome the Double Patenting rejection(s) found on page 8 of the disclosure. The Examiner is hereby requested to allow this Response to be fully responsive to the Office Action mailed December 13, 2002.

Applicants have amended the disclosure to reflect the Examiner's suggestions as to priority information found on page 2 of the Office Action.

Claims 14-17, 20-23, 34 and 35 are pending in the instant action. Claim 14 has been amended. Support for the amendment to claim 14 can be found in the disclosure, generally, as well as specifically on page 6, lines 8-10 of the disclosure as originally filed. Claims 18 and 19 have been canceled. The claims are believed allowable based upon the amendments and remarks presented herein.

Claims 14-23, 34 and 35 were rejected under 35 USC 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. This rejection is traversed based upon the amendment to claim 14 presented herein.

Amended claim 14 is drawn to a chemically modified mutant enzyme with one or more amino acid residues from the enzyme being replaced by cysteine residues, wherein the one or more amino acid residues replaced with a cysteine are in a subsite of the enzyme, the subsite being selected from the group consisting of S1, S1' and S2, wherein at least some of the cysteine residues are modified by replacing thiol hydrogen in the cysteine residue with a thiol side chain, wherein the thiol side chain is selected from the group consisting of  $-\text{SCH}_2(p\text{-CH}_3\text{-C}_6\text{H}_4)$ ,  $-\text{SCH}_2(p\text{-OCH}_3\text{-C}_6\text{H}_4)$ ,  $-\text{SCH}_2(p\text{-CF}_3\text{-C}_6\text{H}_4)$ , and  $-\text{SCH}_2(2,4\text{-diNO}_2\text{-C}_6\text{H}_3)$ .

The Written Description requirement is satisfied if the description clearly allows persons of ordinary skill in the art to recognize what has been invented (see, e.g., MPEP 2163 et. seq.). Claim 14 has been amended to recite that a cysteine is replaced in a

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subsite of the enzyme, the subsite being selected from the group consisting of S1, S1' and S2. Since selection of the site for replacement must be within the subsite, the choices for location of the replacement residues are restricted. Thus, amended claim 14 describes what has been invented with sufficient clarity to one of ordinary skill in the art, and the claim therefore satisfies the Written Description requirement. Claims 15-17, 20-23, 34 and 35 are allowable by virtue of their dependence on claim 14. Accordingly, reconsideration and withdrawal of the rejections are therefore proper and are respectfully requested.

Claims 14-23, 34 and 35 were also rejected under 35 USC 112, first paragraph, because, according to the Office Action, the specification does not provide reasonably provide enablement for any chemically modified mutant enzyme with one or more replacement residues. This rejection is traversed based upon amended claim 14.

A claim is enabled if the disclosure, when filed, contains sufficient information to allow one of ordinary skill in the art to make and/or use the claimed invention (see, e.g., MPEP 2164.01). As amended, claim 14 recites that a cysteine is replaced in a subsite of the enzyme, the subsite being selected from the group consisting of S1, S1' and S2. Since selection of the site for replacement must be within the subsite, the choices for location of replacement residues are restricted, and the disclosure provides sufficient information for one skilled in the art to make and/or use the claimed invention for the full scope of the claim. Thus, claim 14 is enabled, claims 15-17, 20-23, 34 and 35 are allowable by virtue of their dependency on claim 14. Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

In view of the foregoing, Applicants believe all claims now pending in this application are in condition for allowance and issuance of a formal Notice of Allowance

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is respectfully requested. Examiner Hutson is invited to contact Applicants at (650) 846-7544 if there are additional questions/concerns.

Respectfully submitted,



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### IN THE SPECIFICATION

#### Currently Amended

Please replace the paragraph located at page 1, lines 8-9, with the following:

B<sup>1</sup>  
This application claims the benefit of U.S. Provisional Patent Application Serial No. 60/072,266 filed January 23, 1998, International Application PCT/BE99/00152 filed January 9, 1999 and United States Patent Application Serial No. 09/234,956, filed January 21, 1999, which has issued as United States Patent No. 6,284,512, all of which are hereby incorporated by reference, including any drawings cited therein.

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### STATUS OF THE CLAIMS

B<sup>2</sup>  
14. (AMENDED) A chemically modified mutant enzyme with one or more amino acid residues from said enzyme being replaced by cysteine residues, wherein the one or more amino acids replaced with a cysteine are in a subsite of the enzyme, the subsite being selected from the group consisting of S1, S1' and S2, and wherein at least some of the cysteine residues are modified by replacing thiol hydrogen in the cysteine residue with a thiol side chain, wherein the thiol side chain is selected from the group consisting of  $-\text{SCH}_2(p\text{-CH}_3\text{-C}_6\text{H}_4)$ ,  $-\text{SCH}_2(p\text{-OCH}_3\text{-C}_6\text{H}_4)$ ,  $-\text{SCH}_2(p\text{-CF}_3\text{-C}_6\text{H}_4)$ , and  $-\text{SCH}_2(2,4\text{-diNO}_2\text{-C}_6\text{H}_3)$ .

15. A chemically modified mutant enzyme according to claim 14, wherein the enzyme is a protease.

16. A chemically modified mutant enzyme according to claim 15, wherein the protease is *Bacillus lentus* subtilisin.

17. A chemically modified mutant enzyme according to claim 14, wherein the amino acid replaced with a cysteine is an amino acid selected from the group consisting of asparagine, leucine, and serine.

~~18. Please cancel claim 18.~~

~~19. Please cancel claim 19.~~

20. A chemically modified mutant enzyme according to claim 14, wherein the thiol side chain is  $-\text{SCH}_2(p\text{-CH}_3\text{-C}_6\text{H}_4)$ .

21. A chemically modified mutant enzyme according to claim 14, wherein the thiol side chain  $-\text{SCH}_2(p\text{-OCH}_3\text{-C}_6\text{H}_4)$ .

22. A chemically modified mutant enzyme according to claim 14, wherein the thiol side chain  $-\text{SCH}_2(p\text{-CF}_3\text{-C}_6\text{H}_4)$ .

23. A chemically modified mutant enzyme according to claim 14, wherein the thiol side chain  $-\text{SCH}_2(2,4\text{-diNO}_2\text{-C}_6\text{H}_3)$ .

34. A detergent additive comprising the chemically modified mutant enzyme of claim 14.

35. A feed additive comprising the chemically modified mutant enzyme of claim 14.